REMARKS

Office Action

In the Office Action mailed December 4, 2006, the Examiner finally rejected claims 1, 3-10, 12-15, and 17-20 under 35 U.S.C. 103(a). Claims 1, 5-10, 12-15, and 17-20 were rejected as being unpatentable over Toda et al., U.S. Publ. No. 2002/0037100 (hereinafter "Toda") in view of Hill, U.S. Patent No. 7,020,658 (hereinafter "Hill"). Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Toda and Hill in view of Gleicher et al., U.S. Patent No. 5,218,431 (hereinafter "Gleicher"). Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Toda and Hill in view of Bryniarski et al., U.S. Patent No. 5,974,182 (hereinafter "Bryniarski").

Applicant submits the amendment to claim 1 above to address the objection to a claim informality set forth in the Final Office Action so the claims are in better form for consideration on appeal. Additionally, Applicant clarified the relationship between the host system and the storage for the system to place the claim in better form for consideration on appeal. Similar amendments were made to claim 15 so the system would also be in better form for consideration on appeal. Applicant also requests reconsideration of the grounds of rejection as they ignore one or more limitations of the claims that are neither taught nor suggested by any reference of record or combination of references. Remarks explaining the absence of these limitations are set forth more fully below. Therefore, the grounds of rejection should be withdrawn and the claims allowed.

Section 103 Rejection

Claim 1

Claim 1 has been amended to correct the informality noted in the Final Office Action and to specify the relationship of the secondary and tertiary storage to the host system. One limitation of the claim is the requirement that the downgraded file is stored in secondary storage and that the identified file, from which the downgraded file was generated, is stored in secondary storage and then stored in tertiary storage. The tertiary storage is identified as having an access time that is greater than the secondary storage. That is, the term "access time" means that data is retrieved from secondary storage more quickly than data is retrieved from tertiary storage. This meaning follows from the first paragraph of the detailed description in Applicant's specification.

To succinctly state claim 1, it is a method that requires:

1. Identification of a file stored in secondary storage.

2. A determination that the identified file stored in secondary storage is to be downgraded.

3. A downgrade of the file.

4. Storing the downgraded file in the secondary storage.

5. Storing the identified file in tertiary storage.

6. The tertiary storage is slower than the secondary storage.

The Examiner's interpretation of Toda does not disclose the first five elements of this method because the image document processed by the image processing system of Toda is not moved to storage slower than the storage from which is

was originally read and because Toda does not store the compressed image document in the storage from which it retrieved the original image document. Instead, Toda merely describes the loading of a document from a source and the compression of that document. Toda does not state what happens to the compressed file and does not disclose that the original image document is moved to storage that is slower than the storage from which the image document was originally read. Consequently, Toda cannot form the foundation of the section 103 rejection set forth in the Final Office Action.

In more detail, the Toda reference relied on by the Examiner is directed to a system and method for compressing image files that contain text and image data. The image processing apparatus described in paragraph 135 includes RAM, ROM, an external storage device, a storage medium, image data input from an image data input device, and a work area. The ROM is described as storing control programs, a boot program, setup data for the apparatus, and the like. As ROM memory is Read Only Memory, this area cannot be by a file management program to store a data file. The RAM is described as storing programs and data. Should the work area exceed the size of the RAM, the external storage device may be used for more work area as a file. The external storage device is a described as being a hard drive used for saving programs and data. The storage medium drive is described as being for loading programs and data from storage medium. The storage medium drive is described as a CD-ROM drive, DVD-ROM drive, floppy disk from which programs and data may be loaded from storage media, such as a CD-ROM, a DVD-ROM, or floppy disk. No

mention is made of the access times for the external storage device and the storage medium. The image data input device is described as a scanner, or digital camera that can input an image as data to the image processing system.

Claim 1 requires that the identified image file be stored in secondary memory, downgraded, and the downgraded image file be stored in secondary memory. Therefore, the storage medium, ROM, and image input device cannot be secondary storage as Toda does not teach that the image processing apparatus can store data in any of these devices. That is, no teaching or suggestion exists in Toda that a file may be retrieved from the external storage medium, ROM, or image input device, processed, and then the processed file be stored on the device from which the original file was retrieved. Consequently, the only devices that may qualify as secondary storage in the Toda reference are the RAM, the work area, and the external storage device.

Toda teaches in paragraph 141 that a document image may be loaded from the external storage device, image input device, or storage medium drive and placed in RAM. Thus, the RAM and work area are not storage from which an image file is retrieved for processing. A binary image is then generated and stored in another area of the RAM as set forth in paragraph 142. Paragraphs 143-156 disclose additional processing that produces a compressed version of the document image and then the disclosure of the fifth embodiment ends. The Toda reference, however, does not teach or suggest that the compressed image be stored in the storage for the image processing system from which the original image document was loaded. Additionally, the Toda reference does not teach or

suggest that the original image document be stored in another storage area having a longer access time than the storage in which the original image document was stored. The failure to describe what is done with the compressed image is hardly surprising as Toda states that the image processing system addresses issues of quality and efficiency for image compression encountered in the compression of images that are attached to email messages. *Toda, paragraphs 2 and 3.* Thus, Toda teaches away from the claimed invention as the system of the Toda reference does not write the compressed image in the memory from which the original image was taken, but rather sends the compressed image out of the system for an email transmission. Once the message is sent, the compressed version of the image document is no longer accessible on the system. Toda simply does not recognize the need for storing a downgraded version of a file in faster memory while keeping the non-downgraded version in slower memory.

In the Final Office Action, the Examiner interpreted Toda as teaching that the downgraded image document is stored in secondary storage when it was placed in RAM. The RAM cannot be secondary storage because Toda clearly teaches that the image document to be compressed is stored in either external storage, an input image device, or external storage medium. Thus, one of these storage areas must be the secondary storage areas, not the RAM. Storing an image document in RAM or a work area cannot be storing a document in tertiary storage as these memories are typically faster than the external storage device, input image devices, or storage media disclosed in Toda. Consequently, the

tertiary storage must be some other external device, but Toda only teaches writing to RAM. Thus, Toda cannot disclose storing the identified image file in tertiary storage. Toda is also silent regarding how the system loads the image document from the external storage device. The Examiner is using hindsight in an effort to construct the claimed invention from the teachings of Toda. This approach to reading a reference is impermissible.

The Examiner's efforts to combine Hill with Toda are also flawed. One of ordinary skill in the art would not be motivated to combine Hill with Toda. The citations to Hill for such motivation given in the Final Office Action refer to "access frequency" and "access time." As taught by Hill, these terms refer to how often a file is accessed and the time of day at which access occurs. Toda does not process image documents, however, on the basis of how often they are accessed or the dates on which they were accessed. Additionally, Toda is not a database management system, but rather an image document compression system that reduces the size of email attachments. Thus, the Examiner has failed to show why one would combine Hill's teachings regarding the frequency of web file access or the date of a web file's access with a system that compresses image documents from external devices, external storage, or input image devices to generate smaller attachments for email messages.

The Hill reference also fails to teach what the Examiner states it teaches. Specifically, the Examiner asserted that Hill taught "tertiary storage having an access time that is greater than the access time for the secondary storage" and cites column 9, lines 45-53 of the Hill reference. This portion of the Hill reference

clearly refers to the *dates* for file access and not to the speed of the memory being accessed. The first paragraph of Applicant's detailed description in the specification is equally clear that secondary storage has a shorter access time than tertiary storage and that this distinction refers to the speed of retrieval from the storage, not the time of day when the storage is accessed. Thus, Hill is not referring to access time as that limitation is used in claim 1, but rather, is referring to the time of access for a web file.

As noted previously, Hill regards a file management system for a web browser. The files are stored on a user's hard drive, *Hill, col. 1, lines 10-23*, so Hill does not distinguish between secondary and tertiary storage for web files and does not teach or suggest any sort of downgrading operations to be performed with the web files. Likewise, Toda does not differentiate as to the speeds of various types of storage. Therefore, the combination of Toda and Hill fails to teach or suggest the limitations of claim 1 and should be withdrawn.

Claim 5

Claim 5 depends from claim 1 and is patentable for the reasons discussed with respect to claim 1. Additionally, claim 5 requires that the downgrading of the identified image file include reduction of the identified image file resolution to generate the downgraded file that is stored in secondary storage while the identified image file is stored in the tertiary storage having an access time that is greater than that of the secondary storage. Paragraph 6 of the Toda reference cited by the Examiner does not teach that the resolution of the entire image file is reduced and that the reduced resolution file is stored in secondary storage, from

which the original image document was retrieved, while the original image document is stored in tertiary storage, which is slower than the secondary storage. The paragraph cited by the Examiner is silent as to the storage of the compressed non-text portion of the file that is extracted and reduced in resolution. Furthermore, the image file from which the non-text data are extracted is not described as being stored in tertiary storage nor does the resolution reduction of the image file occur in response to a comparison of file metadata being compared to a downgrade threshold. For at least these reasons, claim 5 is patentable over all the references of record, alone or in combination.

Claim 6

Claim 6 depends from claim 1 and is patentable for the reasons discussed with respect to claim 1. Additionally, claim 6 requires that the downgrading of the identified image file include reduction of the identified image file pixel size to generate the downgraded file that is stored in secondary storage while the identified image file is stored in tertiary storage having an access time that is greater than that of the secondary storage. Paragraph 63 of the Toda reference cited by the Examiner does not teach that the file with reduced bit size pixels is stored in secondary storage, from which the original image document was retrieved, while the original image document is stored in tertiary storage, which is slower than the secondary storage. The paragraph cited by the Examiner is silent as to the storage of the file having reduced black pixels (whatever that means). Furthermore, the image file not having reduced black pixels is not described as being stored in tertiary storage. Paragraph 63 of the Toda reference cited by the

Examiner teaches that black pixels of a character text area in a binary image undergo thin-line conversion. The Toda reference does not state that black pixel reduction in thin-line conversion requires a reduction in the bit size of image pixels. The burden of proof is on the Examiner and it has not been met. For at least these reasons claim 6 is patentable over all the references of record, alone or in combination.

Claim 7

Claim 7 depends from claim 1 and is patentable for the reasons discussed with respect to claim 1. Additionally, claim 7 requires that the downgrading of the identified image file include conversion of a color image in the identified image file from one color format to another requiring less data for the image to generate the downgraded file that is stored in secondary storage while the identified image file is stored in tertiary storage having an access time that is greater than that of the secondary storage. Paragraph 150 of the Toda reference cited by the Examiner does not teach generating a downgraded file by converting color data from one format to another requiring less data for representation and storing the downgraded file in secondary storage, from which the original image document was retrieved, while the original image document is stored in tertiary storage, which is slower than the secondary storage. The paragraph cited by the Examiner is silent as to the storage of the discriminated and reduced file. Furthermore, the image file from which color data are extracted for color format conversion is not described as being stored in tertiary storage. Paragraph 150 of the Toda reference cited by the Examiner does not teach that format conversion

of a color image alone may be used for file size reduction. Rather, paragraph 150 discloses the conversion of color image data from one color space to another for the purpose of color discrimination. The Toda reference teaches that the converted color data are rounded following the discrimination made possible by the color format conversion. Thus, the Toda reference teaches a color format conversion that enables discrimination, but it does not teach a color format conversion that reduces data in the file. For at least these reasons, claim 7 is patentable over all the references of record, alone or in combination.

Claim 8

Claim 8 depends from claim 7 and is patentable for the reasons discussed with respect to claims 1 and 7. Additionally, claim 8 requires that the downgrading of the identified image file include conversion of a color image to a color palette version to generate the downgraded file that is stored in secondary storage while the identified image file is stored in tertiary storage having an access time that is greater than that of the secondary storage. Paragraph 7 of the Toda reference cited by the Examiner does not teach that a color palette converted image file is stored in secondary storage, from which the original image document was retrieved, while the original image document is stored in tertiary storage, which is slower than the secondary storage. The paragraph cited by the Examiner is silent as to the storage of the file processed with the use of color palettes. Furthermore, the image file from which the color palettes are generated is not described as being stored in tertiary storage. Paragraph 7 of the Toda reference cited by the Examiner does not teach conversion of a color

image to a color palette version. Instead, Toda teaches that a plurality of color palettes are generated from the original image (paragraph 101) for the purpose of determining how to process a text area (paragraph 117) or how to compress a text area (paragraph 151). Therefore, the Toda reference does not support the asserted ground of rejection. For at least these reasons, claim 8 is patentable over all the references of record, alone or in combination.

Claim 9

Claim 9 depends from claim 1 and is patentable for the reasons discussed with respect to claim 1. Additionally, claim 9 requires that the downgrading of the identified image file include a combination of multiple downgrade operations to generate the downgraded file that is stored in secondary storage while the identified image file is stored in tertiary storage having an access time that is greater than that of the secondary storage. Paragraph 135 of the Toda reference cited by the Examiner does not teach that an image file reduced in size by a plurality of downgrade operations is stored in secondary storage, from which the original image document was retrieved, while the original image document is stored in tertiary storage, which is slower than the secondary storage. The paragraph cited by the Examiner is silent as to the storage of the files processed by the system described in the paragraph. Furthermore, the image files processed by the system are not described as being stored in tertiary storage. Paragraph 135 of the Toda reference cited by the Examiner discloses an overview of the architecture for one embodiment of the Toda system. While Toda does describe various compression methods on different types of data, it

does not disclose a plurality of downgrade operations being performed on an image file and the storage of the original file in tertiary storage while the file downgraded by the plurality of downgrade operations is stored in the secondary storage in which the original file was stored. For at least these reasons, claim 9 is patentable over all the references of record, alone or in combination.

Claim 10

Claim 10 depends from claim 1 and is patentable for the reasons discussed with respect to claim 1. Additionally, claim 10 requires that the downgrading of the identified image file include retrieval of a full resolution image from tertiary storage and the performance of a downgrade operation on the retrieved file to generate the downgraded file that is stored in secondary storage while the identified image file is stored in tertiary storage having an access time that is greater than that of the secondary storage. Paragraphs 49 and 53 of the Toda reference cited by the Examiner do not teach retrieval of a full resolution image file from tertiary storage that is slower from secondary storage, performance of a downgrade operation on the full resolution image file to generate a downgraded file, and the storage of the downgraded file in secondary storage. In fact, FIG. 1 cited by the Examiner illustrates the impossibility of such a teaching. The original image shown in FIG. 1 moves from left to right for processing and results in two sets of compressed codes. These two sets of compressed codes are decoded by the system in FIG. 2 to reproduce the original image. Even if one interprets the original image of FIG. 1 as being stored in tertiary storage, neither the figures nor their descriptions disclose a file being

identified in secondary storage with the identified file being downgraded in response to a comparison of metadata for the file with a downgrade threshold. The Toda reference does not disclose an identified image file in secondary storage, a full resolution image file in tertiary storage, and a downgraded image file being stored in secondary storage after a downgrade operation is performed on the full resolution image file, with the tertiary storage being slower than the secondary storage. Consequently, Toda does not teach or suggest the limitations of claim 10. For at least these reasons, claim 10 is patentable over all the references of record, alone or in combination.

Claim 12

Claim 12 depends from claim 1 and is patentable for the reasons discussed regarding claim 1. Moreover, claim 12 requires that the comparison of the file metadata to the downgrade threshold include the comparison of the file metadata to a file frequency threshold. The Examiner has asserted that Toda describes such a comparison in paragraphs 64 and 94. Assuming for purposes of argument that the generation of a histogram for comparison of density ranges to a maximum occurrence of frequency values for the ranges to determine a representative value for image compression (paragraphs 64-68 of Toda) is a comparison of file metadata to a downgrade threshold (although Applicant maintains it is not so), the limitation of the threshold being a file access frequency threshold is missing from Toda. In an effort to supply this missing limitation, the Examiner cites the Hill reference at column 3, lines 58-61. That combination is not appropriate. The Examiner has failed to demonstrate why one would

compare histogram data derived from pixel data in an image file to a file access frequency threshold for evaluating web file list entries. The comparison in Toda is made for the purpose of compressing the image data. The comparison made in Hill is made for updating a list stored on a user's hard drive. There is no teaching or suggestion in either Hill or Toda that one would select compression parameters with reference to file access frequency. Without such a teaching or suggestion, the combination is inappropriate and cannot properly support the section 103 ground of rejection.

This type of reasoning also applies to the computation of high frequency coefficients from orthogonal transformations of pixel data. The actual pixel values are not file metadata and the orthogonal transformations derive from the pixel values do not relate to the number of times that a file has been accessed for a particular time period. Paragraph 94 of Toda states that the reduction parameter controller of Toda partitions the image data extracted from a file into 8 x 8 pixel blocks for the computation of orthogonal transforms. The coefficients of these transforms are compared to an unidentified threshold to determine a reduction parameter. This portion of the Toda reference does not teach comparison of metadata to a file access frequency threshold. Such a comparison would be nonsensical. Consequently, the Examiner has failed to explain how these orthogonal transforms explicitly relate to a file access frequency threshold. Without a rational relationship, there is no viable basis for combining the orthogonal transform data of Toda with the file access frequency parameter of Hill.

Additionally, the Examiner has failed to show that the references, alone or in combination, teach or suggest that a downgrade operation on an identified file stored in secondary storage be performed in response to a comparison of file metadata to a file access frequency threshold, that the downgraded file be stored in the secondary storage, and that the identified file be stored in tertiary storage. Therefore, claim 12 is patentable over all references of record, alone or in combination.

Claim 13

Claim 13 depends from claim 1 and is patentable for at least the reasons discussed above with respect to that claim. Additionally, claim 13 requires that the comparison of the file metadata to the downgrade threshold include a comparison of the file metadata to a last access time threshold. The Examiner has asserted that Toda describes such a comparison in paragraphs 64 and 94. Assuming for purposes of argument that the generation of a histogram for comparison of density ranges to a maximum occurrence of frequency values for the ranges to determine a representative value for image compression (paragraphs 64-68 of Toda) is a comparison of file metadata to a downgrade threshold (although Applicant maintains it is not so), the limitation of the threshold being a last access time threshold is still missing from Toda. In an effort to supply this missing limitation, the Examiner cites the Hill reference at column 10, lines 27-31. That combination is not appropriate. The Examiner has failed to demonstrate why one would compare histogram data derived from pixel data in an image file to a last access time parameter embedded in a query for evaluating

web file list entries. The comparison in Toda is made for the purpose of compressing the image data. The comparison made in Hill is made for updating a list stored on a user's hard drive. There is no teaching or suggestion in either Hill or Toda that one would select compression parameters with reference to a last access time threshold. Without such a teaching or suggestion, the combination is inappropriate and cannot properly support the section 103 ground of rejection.

This type of reasoning also applies to the computation of high frequency coefficients from orthogonal transformations of pixel data. The actual pixel values are not file metadata and the orthogonal transformations derive from the pixel values do not relate to the last time of day that a file was accessed. Paragraph 94 of Toda states that the reduction parameter controller of Toda partitions the image data extracted from a file into 8 x 8 pixel blocks for the computation of orthogonal transforms. The coefficients of these transforms are compared to an unidentified threshold to determine a reduction parameter. This portion of the Toda reference does not teach comparison of metadata to a last access time threshold. Such a comparison would be nonsensical. Consequently, the Examiner has failed to explain how these orthogonal transforms explicitly relate to a last access time threshold. Without a rational relationship, there is no viable basis for combining the orthogonal transform data of Toda with the last access time parameter of the query in Hill.

Additionally, the Examiner has failed to show that the references, alone or in combination, teach or suggest that a downgrade operation on an identified file stored in secondary storage be performed in response to a comparison of file

metadata to a last access time threshold, that the downgraded file be stored in the secondary storage, and that the identified file be stored in tertiary storage. Therefore, claim 13 is patentable over all references of record, alone or in combination.

Claim 14

Claim 14 depends from claim 1 and is patentable for the reasons discussed above with respect to that claim. Additionally, claim 14 requires that the comparison of the file metadata to the downgrade threshold include a comparison of the file metadata to a classification threshold. The Examiner has stated that this type of comparison is explicitly disclosed in the Toda reference at paragraphs 87 and 89. As explained in the Final Office Action, the Examiner is referring to the teaching in Toda that individual pixels be compared to a threshold to classify a pixel as being either white or black.

Applicant disagrees for a number of reasons. For one, a pixel is *file* data, not file *metadata*. Metadata is data about data. *See e.g.* www.webopedia.com *using "metadata" as a search term*. That is how the Examiner interpreted the term "metadata" with reference to the histogram of paragraph 64 in the rejections discussed above. The Examiner clearly recognized that a histogram is not part of a file, but is data derived or about the file. The inconsistent use of metadata by the Examiner does not comport with the use of that term in the art, as indicated by the website referenced above, and by Applicant's specification, *passim*.

Additionally, the Examiner has failed to show that the references, alone or in combination, teach or suggest that a downgrade operation on an identified file

stored in secondary storage be performed in response to a comparison of file metadata to a classification threshold, that the downgraded file be stored in the secondary storage, and that the identified file be stored in tertiary storage. For at least these reasons, claim 14 is patentable over all the references of record, alone or in combination.

Claim 15

Claim 15 is an independent claim that is directed to a system for managing image files in a host system. The system includes a file data volume, a file selector, a file reducer, and a file controller. Examiner has asserted that all of these elements are disclosed in the Toda reference. For reasons set forth below, Applicant submits that the Examiner's reading of the Toda reference is flawed and that a number of limitations of claim 15 are missing from Toda.

Claim 15 requires a file selector that retrieves file metadata from a data volume and compares the retrieved file metadata to at least one downgrade threshold to identify an image file stored in secondary storage for downgrading. In the Final Office Action, the Examiner states that the text area detector 101 containing coordinates of text areas in an original image 100 is a data volume in which file metadata is stored. For purposes of argument only, Applicant will agree to such identification, although Applicant strongly disputes this identification. The Examiner also states that paragraphs 87 and 94 of Toda disclose a file selector that retrieves file metadata from a data volume and compares it to at least one downgrade threshold to identify an image file stored in secondary storage for downgrading. This reading is wrong. Paragraph 87 does not discuss any

component retrieving data from the text area detector. Instead, it states that the text area detector couples areas together and that the color computation is flexible. It does not, however, state that the coordinate data is retrieved from the text area detector and compared to anything. Consequently, this citation provides no support for the Examiner's assertion.

Likewise, paragraph 94 fails to support the Examiner's position. Specifically, paragraph 94 states that the reduction parameter controller computes orthogonal transforms and compares the number of areas having a high frequency coefficient to a threshold. It does not disclose a component retrieving file metadata from the text area detector, identified by the Examiner has the data volume containing the file metadata, nor does it describe the controller as comparing metadata retrieved from a data volume to a downgrade threshold to identify an image file stored in secondary storage for downgrading. The system of Toda processes one image at a time and does not select files for compression. How Toda determines which image document to load into its RAM is undisclosed. Consequently, the original image was not selected for compression by the system and certainly it was not selected for compression by the reduction parameter controller. The comparison performed by the reduction parameter controller results in the selection of a reduction parameter – not an image file stored in secondary storage. Furthermore, the selected reduction parameter is not downgraded. Thus, the Toda reference fails to support the Examiner's position that Toda discloses a file selector that retrieves file metadata

from a data volume and compares it to a downgrade threshold to identify an image file for downgrading.

The Examiner asserts that Toda teaches a file controller that generates file metadata for storage in the file data volume and that stores a downgraded file in secondary storage and the identified image file in tertiary storage. This reading is also flawed for a number of reasons. For one, the Examiner relies on paragraph 87 for the teaching of the file controller that generates file metadata. Yet, the Examiner has already used this paragraph to identify the text area detector as the data volume. The Examiner, however, does not show how the text area detector both generates file metadata and stores it in a data volume. Additionally, claim 15 requires the file controller to store the downgraded file in secondary storage and to store the identified image file in tertiary storage. Toda cannot perform the function of storing an identified image file because it never identified an image file in secondary storage for downgrading. The Examiner states that Toda stores an identified image file to an external storage device, but that cannot be so because Toda teaches that his system reads an image document *from* the external storage device. *Toda, paragraph 141.* Toda never states it writes an image document to the external storage device and the Examiner has not cited to such a teaching in Toda. In fact, the external storage device of Toda could only be secondary storage as the image document is loaded from that device for compression. The system of Toda, however, does not disclose any selection of an image document from an external device and

certainly does not select an image file based on a comparison of file metadata for a file stored in the external storage device to a downgrade threshold.

The Toda reference simply does not teach a file selector or a file controller as those limitations are set forth in claim 15. Toda does not operate with these limitations because it is an image document compressor and not a file management system. The Examiner's efforts to reassemble the components of Toda into Applicant's claimed invention require creative use of Applicant's specification as a blueprint. Such hindsight use of Applicant's specification is inappropriate and the ground of rejection for claim 15 should be withdrawn. Therefore, claim 15 is patentable over all references of record, alone or in combination.

Claim 17

Claim 17 depends from claim 15 and is patentable for at least the reasons discussed above with respect to claim 15. Additionally, the Toda reference does not teach or suggest a compressor for compressing an identified image file. The Toda reference does not identify an image file for compression as required by claim 17. Instead, the Toda reference receives files without comparing file metadata for a file with a downgrade threshold. Also, the Toda reference fails to describe a compressor that compresses an image file that was stored in secondary storage that is faster than tertiary storage, where the file controller stores the identified image file. Consequently, claim 17 is patentable over all the references of record, alone or in combination.

Claim 18

Claim 18 depends from claim 15 and is patentable for at least the reasons discussed above with respect to claim 15. Additionally, claim 18 requires that the file reducer downgrade the identified image file by converting a color image in the identified image file from one color format to another requiring less data for the image to generate the downgraded file that is stored in secondary storage while the identified image file is stored in tertiary storage having an access time that is greater than that of the secondary storage. Paragraph 150 of the Toda reference cited by the Examiner does not teach a compressor that generates a downgraded file by converting color data from one format to another requiring less data for representation and that stores the downgraded file in secondary storage, from which the original image document was retrieved, while the original image document is stored in tertiary storage, which is slower than the secondary storage. The paragraph cited by the Examiner is silent as to the storage of the discriminated and reduced file. Furthermore, the image file from which color data are extracted for color format conversion is not described as being stored in tertiary storage. Paragraph 150 of the Toda reference cited by the Examiner does not teach that a compressor may in combination with a file selector and file controller use format conversion of a color image for file size reduction. Rather, paragraph 150 discloses the conversion of color image data from one color space to another for the purpose of color discrimination. The Toda reference teaches that the converted color data are rounded following the discrimination made possible by the color format conversion. Thus, the Toda reference teaches

a color format conversion that enables discrimination, but it does not teach a color format conversion that reduces data in the file. Consequently, claim 18 is patentable over all the references of record, alone or in combination.

Claim 19

Claim 19 depends from claim 15 and is patentable for at least the reasons discussed above with respect to claim 15. Additionally, claim 19 requires that the file reducer use an image resolution reducer to reduce the identified image file resolution to generate the downgraded file that is stored in secondary storage while the identified image file is stored in the tertiary storage having an access time that is greater than that of the secondary storage. The Toda reference cited by the Examiner does not teach a file reducer having an image resolution reducer in combination with a file selector and a file controller so the reduced resolution file is stored in secondary storage, from which the original image document was retrieved, while the original image document is stored in tertiary storage, which is slower than the secondary storage. Consequently, claim 19 is patentable over all the references of record, alone or in combination.

Claim 20

Claim 20 depends from claim 15 and is patentable for at least the reasons discussed above with respect to claim 15. Additionally, claim 20 requires that the file reducer include a pixel size reducer for reducing the number of bits in a pixel for the identified image file. Paragraphs 103 and 106 of the Toda reference cited by the Examiner refer to thin-line conversion and this operation is performed to analyze text areas. The Toda reference does not state that black pixel reduction

in thin-line conversion requires a reduction in the bit size of image pixels. The burden of proof is on the Examiner and it has not been met. Additionally, the Toda reference cited by the Examiner does not teach a file reducer having a pixel size reducer in combination with a file selector and a file controller so the identified image file in which pixel size has been reduced to generate a downgraded file that is stored in secondary storage, from which the original image document was retrieved, while the original image document is stored in tertiary storage, which is slower than the secondary storage. Therefore, claim 20 is patentable over all references of record, alone or in combination.

Claim 3

The Examiner rejected claim 3 under 35 U.S.C. 103(a) as being obvious in view of the Toda and Hill combination and further in view of Gleicher et al, U.S. Patent No. 5,218,431 (hereinafter "Gleicher"). Claim 3 depends from claim 1 and is, therefore, patentable for at least the reasons set forth above with respect to that claim. Additionally, claim 3 requires that the downgrading of the identified image file include the performing of a lossless compression on the identified image file to generate the downgraded file. The Examiner stated in the Office Action that Toda is silent with respect to lossless compression. Applicant respectfully disagrees. The Toda reference does discuss the compression of the text data with an MMR compression. *See, e.g., Toda,* page 8, ¶ 128. The MMR compression technique is recognized as a lossless compression technique for binary data. *See, e.g.,* U.S Patent No. 5,204,756, col. 8, l. 42-45. What Toda

fails to teach is the application of lossless compression upon image data. The Gleicher reference does little to remedy this deficiency. Specifically, one of ordinary skill in the art would not be motivated to use the technique set forth in Gleicher to losslessly compress extracted image data in Toda. Instead, Toda discloses a system that takes advantage of the increased compression provided by the use of lossy compression techniques on image data without losing the data in the text, which is preserved through a lossless technique. If a lossless technique was used on the image data, there would be no need to separate the two types of data before compressing them. Therefore, the Examiner has failed to prove that one would combine the teachings of Gleicher with the Toda reference.

The Examiner's reference to Gleicher at col. 4, lines 52-57 does not remedy this failure as it only confirms that Gleicher teaches lossless compression of color image data for animated sequences. Furthermore, the Toda reference acknowledges an awareness of both lossless and lossy compression techniques. The Toda reference, however, reserves lossless techniques for text data and lossy techniques for image data. Therefore, the Toda reference explicitly teaches away from the lossless compression of an image file as required by claim 3. Consequently, claim 3 is patentable over all the references of record, alone or in combination.

Claim 4

Claim 4 has been rejected under section 103(a) as being obvious over the combination of Toda and Hill in further view of Bryniarski, U.S. Patent No.

5,974,182 (hereinafter "Bryniarski"). Claim 4 depends from claim 1 and is patentable for at least the reasons discussed above with respect to that claim. Furthermore, claim 4 requires that the downgrading of the identified image file include the performance of a lossy compression on the identified image file. The Examiner has stated that the Toda reference is silent regarding the lossy compression of an image file. Again, Applicant respectfully disagrees. As known in the art, the JPEG technique is a lossy compression technique for image data. *See, e.g.,* U.S. Patent No. 7,099,514, col. 1, l. 51-55. Therefore, the Toda reference does teach the lossy compression of image data extracted from a file containing both text and image data. Nevertheless, the Toda reference does not teach the lossy compression of an image file that is selected after file metadata for the file is compared to a downgrade threshold. The cited combination also does not teach or suggest the storage of an identified image file that has been lossy compressed in secondary storage and the storage of the identified image file in tertiary storage, the secondary storage having a faster access time than the tertiary storage. Consequently, claim 4 is also patentable over the cited references, alone or in combination.

Conclusion

For the reasons set forth above, pending claims 1, 3-10, 12-15, and 17-20 are patentable over all references of record. The amendments presented above placed the claims in better form for appeal. Reexamination and allowance of all pending claims are earnestly solicited. Should the Examiner conclude that resolution could be reached on claim wording to allow claims and avoid appeal, Applicant requests the courtesy of an interview to discuss such wording.

Respectfully submitted,
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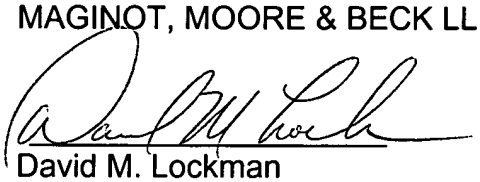

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